

CLAIMS

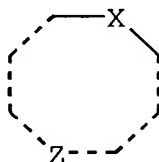
1. An inkjet recording ink comprising an aqueous medium having dissolved and/or dispersed therein at least one dye having λ_{max} in a region of from 390 to 470 nm and having a ratio of an absorbance $I(\lambda_{\text{max}}+70 \text{ nm})$ at $\lambda_{\text{max}}+70 \text{ nm}$ to an absorbance $I(\lambda_{\text{max}})$ at λ_{max} , namely, $I(\lambda_{\text{max}}+70 \text{ nm})/I(\lambda_{\text{max}})$, of 0.4 or less, wherein when a reflection density after printing an image with the ink on a reflective image-receiving medium is measured through a Status A blue filter and a point having a reflection density (D_B) of 0.90 to 1.10 in a yellow region is defined as an initial density of the ink and when the printed image is enforcedly discolored by using an ozone discoloration tester capable of always generating 5 ppm of ozone and an enforced discoloration rate constant is determined from a time until the reflection density decreases to 80% of the initial density, the enforced discoloration rate constant is $5.0 \times 10^{-2} [\text{hour}^{-1}]$ or less.

2. The inkjet recording ink as claimed in claim 1, wherein the ratio of the absorbance $I(\lambda_{\text{max}}+70 \text{ nm})$ at $\lambda_{\text{max}}+70 \text{ nm}$ to the absorbance $I(\lambda_{\text{max}})$ at λ_{max} , namely, $I(\lambda_{\text{max}}+70 \text{ nm})/I(\lambda_{\text{max}})$, is 0.2 or less.

3. A yellow ink for inkjet recording as claimed in claim 1 or 2, wherein an oxidation potential of the dye is nobler than 1.0 V (vs SCE).

4. The inkjet recording ink as claimed in any one of claims 1 to 3, which comprises at least one compound represented by the following formula (A):

Formula (A):



wherein X represents a carbonyl- or heteroatom-containing group and Z represents an atomic group capable of constituting a cyclic organic material.

5. The inkjet recording ink as claimed in any one of claims 1 to 4, which comprises at least one compound represented by the following formula (B):

Formula (B):



wherein X represents a group represented by $-N(Q_1)-Q_2$, Z represents a group represented by $-N(Q_1)-Q_2$ or $-O-Q_3$, Y represents a group represented by $-W-(G)_k-(H)_n-$, W and H each represents a group represented by $-CO-$, $-SO_2-$ or $-PO(Q_4)-$, G represents a divalent linking group, Q_1 to Q_4 each represents a hydrogen atom, an amino group, an alkyl group, an alkenyl group, an alkynyl group, an aryl group, a heterocyclic group, a heteroaryl group, an alkoxy group, an aryloxy group, a heterocyclic oxy group, a heteroaryloxy group, an alkylamino group, an arylamino group, a heterocyclic amino group or a heteroarylamino group, X and Z may combine with each other to form a ring, and k and n each represents 0 or 1.

6. The inkjet recording ink as claimed in any one of claims 1 to 5, which comprises at least one antiseptic.

7. The inkjet recording ink as claimed in claim 5, which comprises two or more different antiseptics.

8. The inkjet recording ink as claimed in any one of claims 1 to 7, which comprises an organic solvent having a boiling point of 150°C or more.

9. The inkjet recording ink as claimed in any one of claims 1 to 8, which comprises at least one organic solvent having a boiling point of 150°C or more and at least one organic solvent having a boiling point of less than 150°C.

10. The inkjet recording ink as claimed in any one of claims 1 to 9, wherein at least one organic solvent having a boiling point of 150°C or more is an alcohol derivative.

11. The inkjet recording ink as claimed in claim 9, wherein at least one organic solvent having a boiling point of less than 150°C is an alcohol derivative.

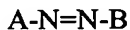
12. The inkjet recording ink as claimed in any one of claims 1 to 11, which comprises at least one organic solvent not containing a heteroatom other than an oxygen atom.

13. The inkjet recording ink as claimed in any one of claims 1 to 12, wherein a water-miscible

organic solvent in which the dye has a solubility of 10 (g/100 g-solvent) or more at 25°C is contained in an amount of 10 mass% or less based on a composition of the ink.

14. An inkjet recording ink comprising an aqueous medium having dissolved and/or dispersed therein at least one dye having λ_{max} in a region of from 390 to 470 nm and represented by the following formula (1):

Formula (1):



wherein A and B each independently represents a heterocyclic group which may be substituted.

15. The inkjet recording ink as claimed in claim 14, wherein an enforced discoloration rate constant of the ink for an ozone gas determined in a region of an image printed with the ink on a reflective image-receiving medium is 5.0×10^{-2} [hour⁻¹] or less.

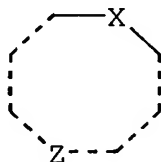
16. The inkjet recording ink as claimed in claim 14 or 15, wherein a ratio of an absorbance $I(\lambda_{\text{max}}+70 \text{ nm})$ at $\lambda_{\text{max}}+70 \text{ nm}$ to an absorbance $I(\lambda_{\text{max}})$ at λ_{max} , namely, $I(\lambda_{\text{max}}+70 \text{ nm})/I(\lambda_{\text{max}})$, is 0.4 or less.

17. The inkjet recording ink as claimed in claim 16, wherein the ratio of the absorbance $I(\lambda_{\text{max}}+70 \text{ nm})$ at $\lambda_{\text{max}}+70 \text{ nm}$ to the absorbance $I(\lambda_{\text{max}})$ at λ_{max} , namely, $I(\lambda_{\text{max}}+70 \text{ nm})/I(\lambda_{\text{max}})$, is 0.2 or less.

18. The yellow ink for inkjet recording as claimed in any one of claims 14 to 17, wherein an oxidation potential of the dye is nobler than 1.0 V (vs SCE).

19. The inkjet recording ink as claimed in any one of claims 14 to 18, which comprises at least one compound represented by the following formula (A):

Formula (A):



wherein X represents a carbonyl- or heteroatom-containing group and Z represents an atomic group

capable of constituting a cyclic organic material.

20. The inkjet recording ink as claimed in any one of claims 14 to 19, which comprises at least one compound represented by the following formula (B):

Formula (B):



wherein X represents a group represented by $-N(Q_1)-Q_2$, Z represents a group represented by $-N(Q_1)-Q_2$ or $-O-Q_3$, Y represents a group represented by $-W-(G)_k-(H)_n-$, W and H each represents a group represented by $-CO-$, $-SO_2-$ or $-PO(Q_4)-$, G represents a divalent linking group, Q_1 to Q_4 each represents a hydrogen atom, an amino group, an alkyl group, an alkenyl group, an alkynyl group, an aryl group, a heterocyclic group, a heteroaryl group, an alkoxy group, an aryloxy group, a heterocyclic oxy group, a heteroaryloxy group, an alkylamino group, an arylamino group, a heterocyclic amino group or a heteroaryl amino group, X and Z may combine with each other to form a ring, and k and n each represents 0 or 1.

21. The inkjet recording ink as claimed in any one of claims 14 to 20, which comprises at least one antiseptic.

22. The inkjet recording ink as claimed in claim 21, which comprises two or more different antiseptics.

23. The inkjet recording ink as claimed in any one of claims 14 to 21, which comprises an organic solvent having a boiling point of 150°C or more.

24. The inkjet recording ink as claimed in any one of claims 14 to 23, which comprises at least one organic solvent having a boiling point of 150°C or more and at least one organic solvent having a boiling point of less than 150°C.

25. The inkjet recording ink as claimed in claim 23 or 24, wherein at least one organic solvent having a boiling point of 150°C or more is an alcohol derivative.

26. The inkjet recording ink as claimed in claim 24, wherein at least one organic solvent

having a boiling point of less than 150°C is an alcohol derivative.

27. The inkjet recording ink as claimed in any one of claims 14 to 26, which comprises at least one organic solvent not containing a heteroatom other than an oxygen atom.

28. The inkjet recording ink as claimed in any one of claims 14 to 27, wherein a water-miscible organic solvent in which the dye has a solubility of 10 (g/100 g-solvent) or more at 25°C is contained in an amount of 10 mass% or less based on a composition of the ink.

29. An inkjet recording method comprising using the inkjet recording ink claimed in any one of claims 1 to 28.

30. An inkjet recording method comprising ejecting ink droplets according to recording signals on an image-receiving material to record an image on the image-receiving material, the image-receiving material comprising a support having thereon an image-receiving layer containing an inorganic white pigment particle, wherein the ink droplet comprises the inkjet recording ink claimed in any one of claims 1 to 28.